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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,321	05/14/2001	Tuomo Suntola	ASMMC.013C2	9994
20995	7590	09/17/2007	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP			TUROCY, DAVID P	
2040 MAIN STREET			ART UNIT	
FOURTEENTH FLOOR			PAPER NUMBER	
IRVINE, CA 92614			1762	
			NOTIFICATION DATE	DELIVERY MODE
			09/17/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Office Action Summary	Application No.		Applicant(s)	
	09/855,321		SUNTOLA ET AL.	
	Examiner		Art Unit	
	David Turocy		1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-21 and 23-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41-45 is/are allowed.
- 6) ☒ Claim(s) 17-21 and 23-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendments, filed 8/20/2007, have been fully considered and reviewed by the examiner. The examiner notes the amendment to claim 17 and 38-39. Claims 17-21 and 23-45 remain pending in the instant application.

Response to Arguments

2. Applicants arguments with respect to the 35 USC 102 rejection has been deemed persuasive because the prior art applied by the examiner fails to explicitly disclose the amended limitations. Accordingly, the examiner has withdrawn the 35 USC 102(b) rejection. However, the examiner maintains the 35 USC 103(a) rejection and notes that it remains the examiners position that it would have been obvious to one of ordinary skill in the art to have optimized the purge gas flow time with a reasonable expectation of providing predictable results.

The applicants have supplied various articles to support their position that one skill in the art would be motivated to reduce the purge times, etc and therefore would not be motivated to optimize a purge time to reduce contamination on the surface of the walls. This is not found convincing. First, one of ordinary skill in the art balances the amount of purge gas, and the subsequent throughput, versus the degree of contamination. However, such a fact does not in itself rebut the fact that one of ordinary skill in the art would appreciate that the amount of purge gas does in fact determine the amount of contamination in the process chamber. Therefore one skilled in the art would

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be motivated to optimize the purge gas flow to reduce the contamination. The applicants argue the prior art fails to appreciate the reactants on the wall of the reaction space, however, the examiner notes that such a limitation is not present in the current claims and therefore such an argument is not commensurate in scope with the claims. Additionally, the examiner notes that the reactants on the wall surface are considered contaminants and therefore one, seeking to remove contaminants in the process chamber, would desire to provide purge gas to remove reactants on the chamber walls.

The applicants have noted purity of the reactants are a way to reduce contamination and therefore reduction of contamination would not motivate one to optimized purge flow, however, such an argument is not convincing. The purity of the gas source may be a factor in the contamination of the film, however, the purge time is also known as a factor and one would desire to optimize the purge gas to reduce the amount of contamination in the deposited film.

The conflict between the prior art and the present application in the case history has not been because this limitation is patentable, but because the claims use this obscure unit of measurement that is not easily converted to standard units of measurement without a given reactor volume. Many references use relative flow times, wherein the purge flow time exceeds the reactant flow time by 2-10 times. This is also inclusive of "at least two reactor space volumes". Even if the applicant wishes to argue that the prior art is not inclusive of this limitation, one of ordinary skill knows that the longer one purges, the more reactant may be removed. To optimize the purge time with cost of purge gas would have been at least obvious. Therefore, as evidence by the

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applicant's remarks, one of ordinary skill in the art would necessarily determine the volume of the reaction chamber (See remarks page 10-11 regarding pressure in chamber) and the optimization of the purge gas would be inclusive of the claim limitation of determining the purge gas flow rate of at least 2X.

Accordingly, the applicant has not provided sufficient evidence to rebut the prima facie case of obviousness that it would have been obvious to one of ordinary skill in the art to have modified the amount of purge gas to optimize the degree of removal of contaminants because the supplying a larger amount of purge gas is merely a predictable use of purge gas to reduce the amount of contaminants in the process. A predictable use of prior art elements according to their established functions to achieve a predictable result is prima facie obvious. See *KSR Int'l Inc. v. Teleflex Inc.*, 127 S Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

The applicant has argued against Kitahara reference stating the reference fails to disclose the particular sequence, such an argument is deemed persuasive and therefore the rejection of the claims 41-45 has been withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 17-21, 23-25 and 32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitahara et al. (US 5,300,186).

These claims are rejected for the same reasons as set forth in the office action dated 2/21/2007 and for the reasons set forth in section 2 above, which is incorporated herein in its entirety by reference

5. Claims 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitahara et al. (US 5,300,186), as applied to claim 17 above, and further in view of Moore, Sr. (US 3,662,583).

These claims are rejected for the same reasons as set forth in the office action dated 2/21/2007 and for the reasons set forth in section 2 above, which is incorporated herein in its entirety by reference.

Allowable Subject Matter

6. Claim 41-45 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: These claims are allowed for atleast the reasons as set forth in the applicants response dated 8/20/2007. Particularly, Kitahara fails to disclose the explicitly sequence of gases through the specific inflow pipes, each of which directly flows into the reaction chamber.

Conclusion

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8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

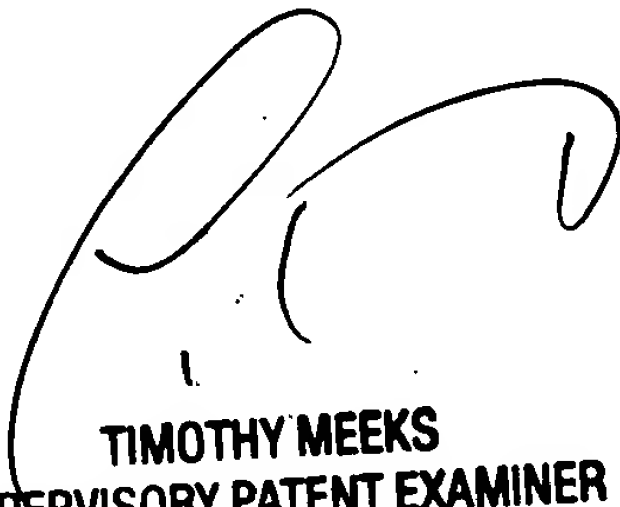
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/David Turocy/
Patent Examiner
AU 1762



TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER